1: Jochelson E-5 (1900-01) 1908 R94 Koryak R94

shores. Owing to the constant cold fogs in the beginning of summer and the heat-energy expended in melting the snow, the earth gets but little heated. More or less clear and comparatively warm days come not earlier than at the end of July and beginning of August. The soil, however, thaws out only to an inconsiderable depth.

Regular observations with reference to this matter have hardly been carried on as yet, but all over that region the natives utilize a hole in the ever-frozen soil as a cellar in which to preserve their provisions. Slunin found a frozen layer of soil in the Gishiga tundra at a depth of 0.9 metres, and on the Stolbovoi tundra at a depth of from 0.36 to 0.54 metres.[1] Dittmar found in summer, near Gishiginsk, a thick layer of fossil ice at a depth of from 45 cm. to 60 cm.[2] On the Sedanke River he found the frozen soil at a depth of from 60 cm. to 90 cm.[3]

On the northern slopes of even very small heights, in gorges, or in rocky bays, the ice-glazed snow, hardened by the winds, melts only toward the end of August. The moist, moss-covered turf-layer of the tundra is another means by which the heat is prevented from penetrating deep into the soil. The rain-water and the water from the melting snow, which evaporates but very slightly, unable to penetrate the frozen soil, stagnate on the surface of the plain, forming extensive swamps, and rendering all communication difficult or impossible during summer. Thus, from the beginning of May until the middle or end of October, the Russian settlement of Gishiginsk, as well as other settlements, is completely cut off from the Koryak villages and camps.

Communication between points situated at a short distance from one another is carried on by the Koryak on foot, and by the Tungus by riding their reindeer. The animals best adapted for use in moving from place to place in that swampy region would be pack-horses; but there are very few horses available, particularly in the Gishiga district. The Russian inhabitants of Gishiginsk owned in 1901 only about sixty-five horses, brought thither at different times from the Yakutsk Province. Though these horses are very hardy, they cannot long endure the journeying through the swamps, but wear out quickly, since they have only the scant green fodder upon which to depend. The Russians use them only for short-distance riding between their own settlements along the Gishiga River, or from the settlement Gishiginsk to the Tungus fairs on the Varkhalan and Nayakhan Rivers; and seldom during summer does a Russian merchant venture even to the nearest Koryak villages.

For getting over from Gishiga to Paren (Poitun) in the fall of 1900, I

[1] See Slunin, I, p. 230.
[2] See Dittmar, Reisen in Kamtschatka, pp. 482, 482.
[3] Ibid., p. 483.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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Fig. 1. Women drawing Water.

251

Fig. 2. Women cutting Salmon.

[Facing p. 570]

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

Instead of
514 a wooden chamber-vessel, rich reindeer-breeders use imported brass wash-
177 basins. Once when I had to remain over night at the tent of a wealthy
556 reindeer-breeder, I had to sleep in the same tent with the proprietors. As soon as I entered the inner tent, and before I had had time to warm up and drink my tea, the host, as a special mark of courtesy, brought in the brass basin and placed it in the corner of the tent.

262 Animal Food. — Animal food is the principal, if not the exclusive nourishment of the Koryak, particularly of the Reindeer Koryak, who use less vegetable food than do the Maritime people. Animal food consists of fish, sea-mammals, reindeer, mountain-sheep, bears, birds, and shell-fish.

262 Fish, fresh and sun-dried, is the main food of the Maritime Koryak.
252 During the summer and autumn, boiled fresh fish is eaten. The people are also fond of frying fresh fish on spits. Heads of fish are eaten raw, the cartilages being considered dainties. In winter, fish is eaten both cooked and raw. Raw fish is eaten frozen and sliced into thin chips. The eating of frozen fish is, however, much more widespread among the Arctic tribes west of the Stanovoi Ridge and among the Russians.

●251 Dried fish (called by the Russian settlers "yukola") is prepared by the women on the river-bank or seashore during the summer fishing-season, and is preserved for winter use. Plate xxx, Fig. 2, shows how the women cut fresh dog-salmon for drying it in the sun. First the head is cut off, which is dried separately. Then the maw is ripped open with a knife, and the entrails are taken out. The roe is dried separately, and the flesh is cut in broad strips along both sides of the backbone. These strips remain joined at the tail, and are thus hung over the poles of the drying-frames. On sunny days the drying proceeds very fast. In three or four days the yukola is ready. In clear weather the preliminary drying is done on open drying-frames, as shown on Plate xxxi. When dry, the yukola is taken off from the drying-frames and hung under the platform of the storehouse. In autumn, when the nights are cold, and there is no danger of rot being caused by dampness, the dried fish are piled up and placed in the storehouse. The sun-dried fish is covered with a dry crust, beneath which the flesh remains soft, and the fat is preserved; but the process of air-drying rarely goes on without trouble. On hot days, in the absence of winds, numerous large flies settle on the fish, and lay their eggs. After two or three days, larvæ come out, which devour the juicy part of the yukola, and leave only a thin, dry, and tasteless layer on the skin. The preparation of the yukola fares still worse if foggy and rainy days prevail during the period of the main catch. Though hung up under special platforms or under the platform of the storehouse, the sliced fish does not dry, but begins to decompose, and the decaying pieces become detached from the skin and fall to the ground; so that in a wet summer, even when the catch of fish has been excellent, the Koryak

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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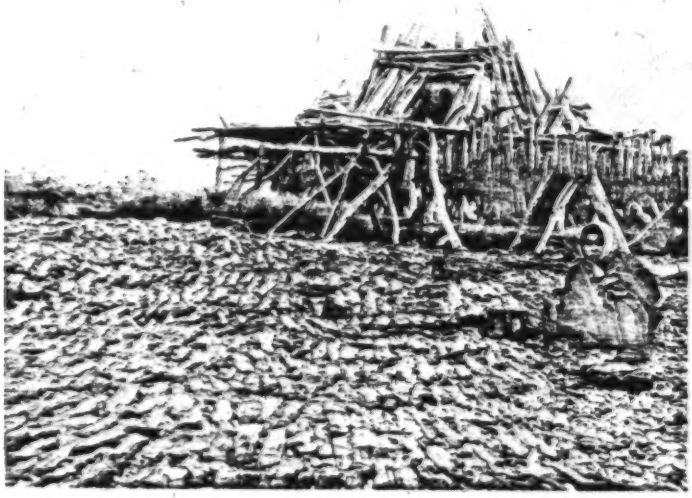

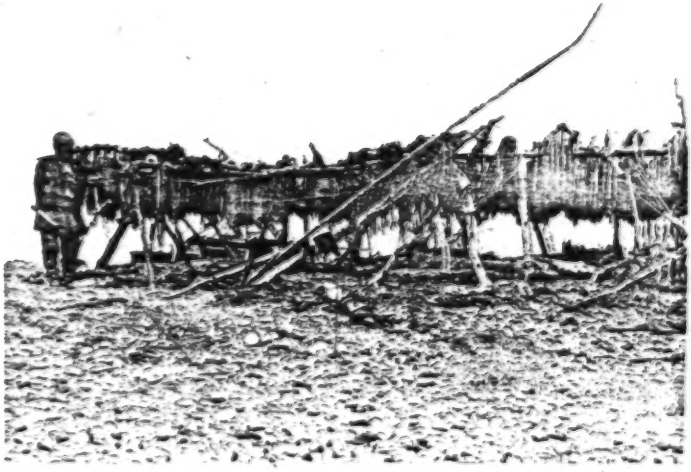

DRYING SALMON.

The Koryak.

[Facing p. 572]

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

251 may remain with a scanty supply for winter use, owing to their ignorance of other methods of preserving fish than by sun-drying. The weather most favorable for preparing the yukola is during clear cool days, with a strong wind that scatters the flies. In general, yukola made of dog-salmon seemed [264] to me tasteless and dry; it cannot be compared with the fat juicy yukola made of the *Coregonidæ* of the Arctic rivers. Hence the Koryak, when eating dog-salmon yukola, dip it in seal-oil.

After the strips of meat for yukola have been cut off, some flesh still remains on the skeleton of the fish. A portion of this is cut off in thin slices, and dried in the sun on the sand or gravel of the river-banks. The skeletons of the fish are hung up to dry on ordinary drying-frames, and in winter serve as food for the dogs.

262 It is interesting to note that in cutting up herring, the ancient bone knife only is used. Such a knife, made of the jaw-bone of a white whale, 252 is represented in Fig. 108. All other fish is cut with modern iron knives. 412 This may be due to the convenience of the bone knife, — which is similarly still used by the Koskimo of Vancouver Island for cutting herring, — or it may be a taboo pointing to the fact that in former times herring played a more important part in the food of the Koryak than it does now. With reference to other species of fish, a taboo is observed of not cutting them across the body, but lengthwise only.

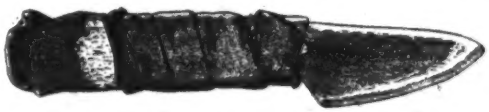

Fig. 108 ($\frac{1}{11\frac{1}{2}}$). Bone Herring-Knife. Length, 22 cm.

251 I have already mentioned that in certain settlements, as in Itkana, where the catch of large salmon is small, the principal winter supply of fish consists of uyo'k *(Salmo socialis)*. This small fish is dried on the sand or gravel of the shore, on which it is spread in a thick layer. Heaps of fish are frequently turned over with rakes (Fig. 109) the teeth of which are made of

[412]

Fig. 109 ($\frac{1}{11\frac{1}{2}}$). Fish-Rake. Length, 60 cm.

[262] reindeer-antler. This fish, like the dried dog-salmon, is eaten in winter, dipped in seal-oil; or it is mixed with roots and boiled, and eaten as a gruel. If the summer is rainy, the heaps of *Salmo socialis* turn into one mal-odorous mass, which freezes with the advent of cold nights. In Itkana every house-owner stores up for winter two or three storehouses full of this small fish.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

In settlements where dog-salmon is the main supply, this species of smelt is eaten by men only in the years when no dog-salmon has been caught. In years when there is plenty of dog-salmon, it is used only for making a soup for the dogs.

Sea-mammals, mainly seals, occupy a prominent place in the household of the Maritime Koryak; but since the supplies do not hold out long, meat of sea-mammals is not eaten often. Towards spring, hardly any storehouse contains meat of sea-mammals. In summer and autumn their meat, particularly that of young ones, is consumed in large quantities, and considered a more toothsome food than fish.

The meat of seals and other sea-mammals is principally eaten boiled. There is reason to think that in former times meat was cooked in clay pots. Late in autumn, when the killed seals freeze, the Koryak preserve them entire, if not wanted for immediate consumption. At other times they are cut up right after the hunt, lest they decay. The blubber is cut into pieces and tried out. Until cold weather sets in, the oil is kept in bags made of a seal's stomach or of bladders. For this purpose a wooden pipe is inserted in the opening of the bladder or bag. It serves as a neck to the soft bottle, and is closed with a wooden or bone stopper, the edges of the bladder or stomach being fastened tight to the pipe with a sinew thread. In winter, seal-oil is frozen and cut with a knife as needed. The meat of gutted seals is cut into small pieces and placed in the storehouse in troughs or buckets, where it is preserved until cooking time. Seal-meat is sometimes dried in the sun in summer. It is cut into thin slices and hung up on the poles of drying-frames, or it is spread out on the ground. On journeys, seal-meat is also eaten raw, cut with a knife into small slices.

The meat of the white whale, on account of its taste, is prized more highly than seal-meat, and its oil is particularly well liked. The white-whale oil is entirely free from the unpleasant smell of seal-oil. A single white whale yields between six hundred and twelve hundred pounds, or more, of a light-colored oil, which congeals at 4° or 5° C. The fried skin of the white whale, too, is considered a dainty.

In Bering-Sea the meat of walrus and sea-lions is highly valued; but both animals are becoming more and more scarce, owing to their pursuit by poaching schooners. Walrus used to be particularly numerous in Karagha Bay and in the coves of Karagha Island. Even now, Koryak hunters, not only from the villages of Qare'nin and Kičhin, but also from Alut, undertake walrussing-expedition to Karagha Island in summer in their skin boats.

The reindeer is the source of the principal foodsupply of the Reindeer Koryak. The marrow, kidney, liver, gristle, and tendons of the legs, which are torn off with the teeth, are eaten raw, after the reindeer is killed. The marrow is treated as a dainty. It is obtained by breaking the bone with a

I: Jochelson E-5 (1900-01) 1908 RY 4 Koryak RY 4

000 the mice resort to suicide by hanging themselves in the crotches of branches.
137 The following roots are dug out of mice-holes: bulbs of martagon (*Fritillaria sarana*); *Claytonia acutifolia* Wild, called "sweet-root" by the Russians, ɪ'nat by the Koryak; roots of wild sorrel (*Polygonum polymorphum*);
262 the root called me'tčin by the Koryak and "bitter-root" by the Russians; and the roots of sedge grass (called pa'ɔxo by the Koryak). All these roots are eaten both raw and cooked. When eaten raw, they are dipped in seal-oil or pounded with roe. They are cooked with fish and reindeer-meat, either in the form of a porridge made of roots ground together with fish, or by cooking roots in seal or reindeer blood.

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[264]

[251]

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Fig. 111. *a* ($\frac{11}{1171}$). *b* ($\frac{11}{1172}$). Picks for gathering Roots. Greatest length, 56 cm., 37 cm.

Willow-herb (*Epilobium angustifolium*; Koryak, mɪ'nmet occupies the first place among edible herbs. The stems of willow-herb are dried in bunches in the sun or over the hearth, and are chopped with stone hatchets (see Fig. 103). Pieces of seal-blubber or reindeer-fat are dipped into the powder thus obtained, and are thus eaten. The flour is also made into a pudding by grinding the crushed herb with berries and melted seal-oil. In Kamchatka the pith is taken from the split stems, dried in the sun, and stored away for winter use. The fresh leaves of willow-herb are used instead of tea, when the latter is lacking. In northern Kamchatka the Koryak use for food the stem of the sweet *Heracleum spandilium*.

Berries as well as roots are used fresh, raw, or cooked in porridge made of blood, or of cooked fish or meat. Berries also form an ingredient in puddings made of ground fish-roe, fat, and pounded fish. A favorite dish is furnished by the pounded flesh of sun-dried dog-salmon mixed with seal-oil and bleaberries. This mixture is pounded in wooden trays or dishes with wooden or bone pestles. A bone pestle is represented in Fig. 112. The following is a list of the principal berries used: *Empetrum nigrum*, *Vaccinium uliginosum*,

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

Vaccinium Vitis idæa, *Rubus chamæmorus*, and also *Lonicera cærulea* and *Prunus padus* (in northern Kamchatka). Bleaberries (*Vaccinium uliginosum*) are considered the best. In Kamchatka the fruit of *Prunus padus* is crushed, and dried in the sun in the form of flat cakes.

Puddings made of crushed berries, roe, fish and seal oil, are frozen and then eaten, pieces being chopped off with a knife. These puddings are considered a treat for visitors, and excellent travelling-provisions.

Fig. 112 (1/11). Bone Pestle. Length, 23 cm.

Berries are picked in summer and autumn. The Reindeer Koryak have more opportunity than the Maritime Koryak to pick the cloudberry (*Rubus chamæmorus*), which grows in the tundra; but they do not store it, and they eat it right after picking.

Other food-plants are the fruit of the wild rose (*Rosa alpina* Pall.), the mountain ash, sea-colewort, cedarnuts, and willow-bark. Sea-colewort (*Alaria esculanta*; Koryak, me'čgomei) is eaten not only by the Maritime Koryak, but also by the Reindeer Koryak when hunting on the seacoast in summer. It is cut with a knife, and cooked with seal or reindeer blood, or also with reindeer-meat. Cedar-nuts are gathered late in autumn, extracted from their cones, and preserved in small skin bags. It is interesting to note that the Koryak eat the nuts with their shells on. The inner portion of willow-bark is also consumed. It is stripped off the trees, crushed with a stone hammer, and cooked with fish. It is also chewed raw.

To the vegetable foods used by the Reindeer Koryak must also be added the contents of the reindeer's first stomach, which consists of reindeer-moss not completely digested. This greenish mass is cooked with reindeer-blood. This food, however, is now beginning to drop out of use. Wealthy reindeer-breeders usually throw away the contents of the reindeer stomach; but when other food is lacking, the herdsmen eat them.

The winter supplies of berries, roots, and other edible plants, are not large, and do not figure as an essential or constant ingredient of nourishment. Towards the middle of winter, hardly any supplies of vegetable food are left; and towards spring, when animal food is about to give out, all the vegetable food has been consumed.

Flour and rice are sold by Russian dealers. These products may also be found at the government depot in Gishiga, where they are sold to the natives at cost price.

The Koryak are very fond of these imported vegetable products, particularly of rice, of which gruel is cooked and eaten with seal-oil or reindeer-fat. They like wheat flour, but not rye flour. It is mixed with water or blood, and

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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Fig. 141 shows a man's ordinary belt-knife, with a wooden sheath having tin rims and ears for suspending it on the belt. This knife, like all straight knives, has a thick back. It is called "belt-knife" (itr't-wal or yeče'twal), and is used in eating, and for working small wooden objects and carvings in bone. With this same knife, sharpened to a keen edge, hair is cut or shaved,[1] the hair on reindeer-skins designed for clothing is cut and reindeer are stabbed when killed for food and not intended as offerings. With this knife, too, fish is gutted for sun-drying. Women usually carry it stuck into the boot-leg. In very rare cases do women carry such knives at the belt.

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A knife of the same form,

Fig. 141 ($\frac{1}{11\frac{1}{2}}$). Straight Knife and Sheath. $\frac{1}{2}$ nat. size.

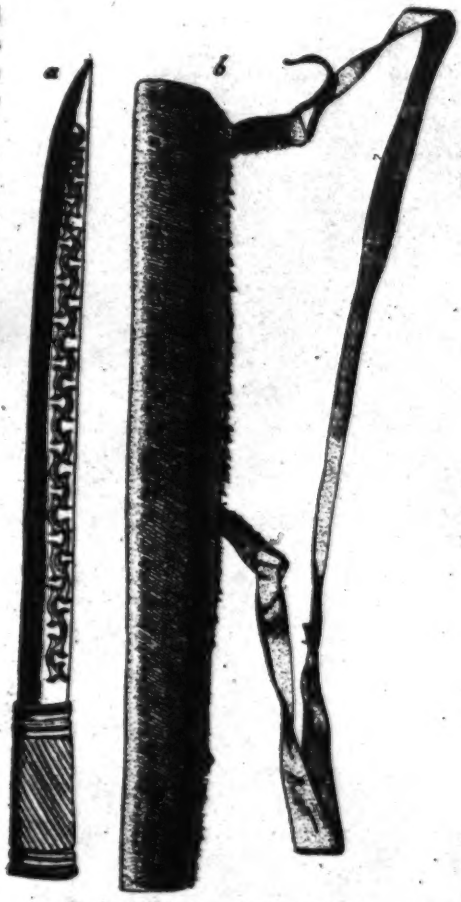

Fig. 142 ($\frac{1}{11\frac{1}{2}}$). Large Knife and Sheath. Length of knife, 56 cm.

but somewhat longer (including the haft, about 45 cm. in length), is called "hip-knife" (yō-wal), because it is not carried on the belt, but is tied to the

[1] See p. 604.

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

with large nets sewn together from the smaller ones they owned individually.

Other methods of fishing included fishing with the aid of an iron hook (marik) and "dipper" nets. The fisherman stood up to his knees in water, holding in his hands an implement that looked like a large sack-net on a long pole. Sighting a fish, he quickly directed the net towards it, scooping it up and throwing it out on the gravel shore. This method was used in the beginning of the fish-run, before the cooperative set to work.

Most of the catch went into the making of yukola. The fish were disemboweled and hung to dry on special racks. The yukola (fish dried in the sun and the wind) was put away in storehouses—tents on high piles, covered with dry grass. Yukola was usually made by women, while fishing was done chiefly by men. The yukola was the principal food of the people all year; it was also used as feed for the dogs, in addition to "pickled fish"—freshly caught fish piled into a pit, covered with earth, and left to ferment until needed.

An important auxiliary occupation among both sedentary and nomad Koryaks was hunting, which was done solely by men. The fur animals hunted were fox, wolverine, otter, hare and ermine.

Fur-animal hunting was most important among the Palantsy, who lived in a region abounding in Kamchatka sable. These were trapped in nets. Other animals were hunted with guns. Foxes and smaller animals—yevrazhka hamster and ermine—were caught in springtraps. The latter two were usually hunted by adolescent boys. Hares and partridges were caught with a noose. In early spring, many hunters took meat animals—bears, Siberian marmot, wild reindeer and mountain sheep. Tundra animals were usually hunted without the aid of hunting dogs, which were owned by relatively few hunters.

An important role in Koryak economy was taken by the gathering of wild plants. The gathering of edible roots, grasses and berries was women's work. Roots were obtained chiefly from mouse-nests. Searching out a mouse-nest, the woman dug it up with a special wooden hoe and took from it the store of edible roots prepared by the mice. The berries gathered were blueberry, cloudberry and crowberry.

Grass was used to make inner lining for boots, and was also woven into mats, baskets, bags and purses. The weaving of variously shaped baskets, from those in the shape of bowls and trays down to small oval boxes with lids, and also bags of various shapes and sizes was especially developed among the Karagin and Alyutor women.

The men widely engaged in carving bone and the horns of wild sheep.

One of the villages of the northern coastal Koryaks—the village of Paren' on Taygonos Peninsula, was long known for blacksmithery. The Paren' blacksmiths reforged accidentally gotten pieces of iron into knives famed throughout the Koryak territory and beyond it. Even in the early years of the current century, the local Koryak population preferred them to imported Russian and American knives.

Housing

The dwelling of the reindeer-breeding Koryaks (yaranga) was a tent, similar to the Chukchi yaranga (called yayan'a in the Chavchuven dialect, and raran'a in the Alyutor dialect). Cylindrical at the base and conical at the top, it had a framework of poles and was covered with reindeer skins, with the fur outside. The pelts to be used for covering the yaranga were scraped a little; some of the flesh side was peeled off, then it was kneaded and smoked to make it waterproof. For summer dwellings, the hair was removed, or else worn, old coverings were used.

22:Barrett-Hamilton and Jones--287 N-2 (1897) 1898 Koryak
116, 251, 342, 417

"Quite a different sort of edifice is the balagan, a thatched pyramidal hut raised to a height of 10 or 12 feet from the ground on posts and entered by a rough ladder (1) formed

1. Such ladders were found on the Kamchatka river, on the mainland, by Guillemard (see figure on p. 80 of Edition II. of the 'Cruise of the Marchesa'), as well as in such a widely different locality as Andai, in the north of New Guinea (op. cit., figure on p. 391). In the latter case they cannot have been intended to prevent the access of animals, since the native dogs are stated to be able to ascend by them. I believe I also saw the same ladders leading to balagans on the island of Hoven Saki, in the Southern Japanese archipelago, but could not be quite sure through my glasses.

of a tree-trunk placed loosely leaning against one side of the floor, and having big notches roughly hewn in it to form steps. In the centre of one side of the room thus formed was a rough and doorless entrance, covered with a skin; and below the flooring hung the dried salmon which form the winter supplies of the natives—thus safely placed out of reach of the hungry sledge-dogs."